



CH2MHILL

June 16, 2003
172769

Mr. Bob Eller
Siting Project Manager
California Energy Commission
1516 Ninth Street, MS-15
Sacramento, CA 95814-5504

RE: Data Response, Set 1E
Walnut Energy Center (02-AFC-4)

On behalf of the Turlock Irrigation District, please find attached 12 copies and one original of the Data Responses, Set 1E, in response to Staff's Data Requests dated January 23, 2003. We are also filing copies of this Data Response electronically.

Please call me if you have any questions.

Sincerely,

CH2M HILL

John L. Carrier, J.D.
Principal Project Manager

c: Project File
Proof of Service List

WALNUT ENERGY CENTER (02-AFC-4)

DATA RESPONSE, SET 1E (Responses to Data Requests: 24-28)

Submitted by
TURLOCK IRRIGATION DISTRICT (TID)

June 16, 2003



2485 Natomas Park Drive, Suite 600
Sacramento, California 95833-2937

**WALNUT ENERGY CENTER
(02-AFC-4)
DATA RESPONSES, SET 1E**

Technical Area: Biological Resources

CEC Author: Melinda Dorin

WEC Authors: Debra Crowe and John Cleckler

BACKGROUND

On page 8.2-7, the AFC states that initial field surveys have been completed but additional surveys will be conducted for specific species during the appropriate seasons.

DATA REQUESTS

24. Please submit additional survey results for special status plants. Include the dates and duration of the studies, methods used to complete the studies and the names and qualifications of individuals conducting the studies.

Response: In Data Response, Set 1A we stated:

Spring studies are expected to be completed and submitted by April/May 2003. The associated report will include dates and duration of the studies, methods used to complete the studies and the names and qualifications of individuals conducting the studies.

The referenced report is provided as Attachment BIO-24.

25. Please submit additional survey results for Swainson's hawk nesting sites. Include the dates and duration of the studies, methods used to complete the studies, and the names and qualifications of individuals conducting the studies.

Response: In Data Response, Set 1A we stated:

Spring surveys are expected to be completed and submitted by April/May 2003. The associated report will include dates and duration of the studies, methods used to complete the studies and the names and qualifications of individuals conducting the studies.

The referenced report is provided as Attachment BIO-25.

26. Please submit additional survey results for burrowing owl nesting sites. Include the dates and duration of the studies, methods used to complete the studies, and the names and qualifications of individuals conducting the studies. Report any sightings of burrowing owl individuals, or recent sign of burrow use.

Response: In Data Response, Set 1A we stated:

Spring surveys are expected to be completed and submitted by April/May 2003. The associated report will include dates and duration of the studies, methods used to complete the studies and the names and qualifications of individuals conducting the studies.

The referenced report is provided as Attachment BIO-25.

27. Please submit additional survey results for other protected species, such as migratory birds and white-tailed kites, that may use the site or associated linear facilities for foraging or nesting. Include the dates and duration of the studies, methods used to complete the studies, and the names and qualifications of individuals conducting the studies.

Response: In Data Response, Set 1A we stated :

Spring surveys are expected to be completed and submitted by April/May 2003. The associated report will include dates and duration of the studies, methods used to complete the studies and the names and qualifications of individuals conducting the studies.

The referenced report is provided as Attachment BIO-25.

28. Please submit additional survey results for vernal pool invertebrate species. Include the dates and duration of the studies, methods used to complete the studies and the names and qualifications of individuals conducting the studies.

Response: In Data Response, Set 1A we stated :

Spring surveys are expected to be completed and submitted by April/May 2003. The associated report will include dates and duration of the studies, methods used to complete the studies and the names and qualifications of individuals conducting the studies.

Five copies of the Walnut Energy Center – Wetlands and Waters of the U.S. (Survey Report) have been provided to the California Energy Commission as Attachment BIO-26.

**WALNUT ENERGY CENTER
(02-AFC-4)
DATA RESPONSES, SET 1E**

ATTACHMENT BIO-24

**Walnut Energy Center – Special-Status Plant
Species (Survey Report)**

Walnut Energy Center - Special-Status Plant Species

PREPARED FOR: Debra Crowe / SAC

PREPARED BY: Russell Huddleston / SAC
Richard Crowe / SAC

DATE: June 11, 2003

Introduction

The Turlock Irrigation District (TID) Walnut Energy Center (WEC) will be a nominal 250-megawatt (MW) combined-cycle generating facility. The WEC will connect to TID's electrical transmission system via new 115- and 69-kV transmission lines. Natural gas for the facility will be delivered via approximately 3.6 miles of new 8-inch pipeline that will connect to Pacific Gas & Electric Company's (PG&E's) existing gas transmission lines (Line 215) located 3.6 miles south of the project site at Bradbury Road. The recycled water will be delivered via a new 1.6-mile pipeline from the WWTP to the project site. Potable water will be provided via a new 0.9-mile pipeline connecting to an existing City water main located in Tegner Road, east of the WEC site.

Site Location Information

The proposed WEC will be located northern part of the San Joaquin Valley, in Stanislaus County. The project site will be located at the western edge of Turlock, approximately 2.7 miles west of Highway 99, just south of West Main Avenue (J17), off of Washington Road (Figure 1a). The WEC site includes approximately 18 acres of land at the northeast corner of a 69-acre parcel located in Section 20, Township 5 South, Range 10 East (Turlock 7.5-minute Quadrangle) (Figure 1b). Industrial development exists on the north and east sides. Agricultural uses are located south of the site and agricultural, residential, and utility uses are to the west. The plant would be located in an industrially-zoned area of Turlock that has several tall industrial structures within the context of mixed industrial, agricultural, and residential uses.

Regional Setting

The San Joaquin Valley is situated in the southern half of California's Central Valley, between the Sierra and Coast ranges, extending from Stockton south to Bakersfield. The foothills that rise to the Sierra Nevada are 50 miles east of the project. The Diablo Range portion of the Coast Range is 25 miles to the west. The San Joaquin River drains the northern half of the Valley and is approximately 7 miles west of the site. The San Joaquin River flows north and drains to the Sacramento-San Joaquin River delta, approximately 50 miles northeast of Turlock. The Tuolumne and Merced rivers are approximately 9 miles to the north and south of the site, respectively. The San Luis National Wildlife Refuge is approximately 12 miles south of the site, south of the Merced River.

The WEC site and water supply lines lie in the City of Turlock's (City's) urban service area with the electric transmission line and natural gas pipeline extending from the site into Stanislaus County jurisdiction. The site is bordered on the north by the Foster Farms Foster Commodities – West Main facility, on the west by South Washington Road, and on the south and east by cultivated fields (Figure 1b).

The primary land uses in the project vicinity are farming and industrial. The project site is zoned industrial and is temporarily used to grow field corn in the summer months and winter wheat or oats during the fall/winter seasons. The site is at 85 feet in elevation. The primary water conveyance features in the project area include irrigation canals and drainages that are managed by individual farmers through Improvement Districts that are overseen by the Turlock Irrigation District. There are no Significant Natural Areas or Designated Ecological Reserves in the project area.

The region's climate is arid, characterized by hot, dry summers and moderate, wet winters. Summer temperatures frequently exceed 100 degrees Fahrenheit (°F) and winter temperatures are generally mild, with fewer than 10 freezing days per year. Rainfall averages 12 inches per year, most of which falls between November and April.

Soils

Soils in the survey area included mapped units belonging to the Dinuba and Hilmar Series. The Dinuba soils are moderately coarse textures soils that are derived predominately from granitic alluvium. In some areas soluble salts and alkali are common, but large non-alkaline areas are also present. These soils are used for irrigated field crops, alfalfa and pasture.

The Hilmar series is characterized by a moderately alkaline sandy soils underlain by loamy soils formed in alluvium derived predominately from granitic material. Land use for this series includes alfalfa, row crops, irrigated pasture and grapes.

Habitat and Vegetation Communities

Habitat types in the project survey area comprise agricultural fields, irrigation canals and drainages, isolated woodland habitat, ruderal roadsides, industrial, commercial, landscape, and small residential farms.

Agricultural Fields

Agriculture dominates both the project site and habitat along the linear project features. Habitat on the project site is actively farmed for corn and winter oats/wheat. Surrounding areas and most of the linear corridors are adjacent to fields of corn, alfalfa, hay, and row crops. There are also smaller areas of grapes and orchards. Farming is intensive, resulting in the removal of native vegetation, and farm fields are plowed or graded up to the edge of rural roads and highways.

Irrigation Canals and Drainages

Irrigation and drainage canals are either cement-lined or shallow, temporary structures formed by a tractor-mounted plow. The cement-lined canals typically supply water to agricultural fields. The dirt drainages collect runoff from the fields where water temporarily

sits and percolates underground. Drainage ditches paralleling the gas line vary in size from approximately 3 to 6 feet wide. These ditches are primarily found along roadsides and are generally kept clear of vegetation. A few detention ponds occur in association with dairies where wastewater collects and evaporates to a thick sludge. No vegetation was observed in the dairy sludge ponds.

Isolated Woodland Community

A small, isolated woodland habitat occurs immediately northwest of the WEC site and south of the Foster Farms railroad track. This habitat encompasses approximately 0.5 acre and includes Fremont cottonwood, black walnut, mulberry, and tree-of-heaven. The wooded area is adjacent to an isolated 5-foot-deep, 10-foot-wide channel that was presumably used for drainage and irrigation of the adjacent fields.

Ruderal Roadside Communities

The dominant habitat type in the county road rights-of-way is bare ground with non-native ruderal plant species. Roadside ruderal habitats are found at the edges of farmed fields (in most cases it is also the shoulder of the road), in open fallow fields, or along railroad and highway rights-of-way with compacted substrates. These areas are typically kept free of vegetation (purposely or from continual disturbance) and used as access for farm equipment, placement of drainage ditches and utility line rights-of-way, or other activities related to industrial and agricultural use. Sparse vegetation along the railroad tracks typically contains ruderal species and is managed with herbicides.

Methods

Prior to conducting the botanical field survey, information on special-status plants was obtained from the California Natural Diversity Data Base (CDGF 2002) and the California Native Plant Society's Electronic Inventory of Rare Plants (CNPS 2001). The database search resulted in a list of 13 special-status plants species that could occur in Stanislaus County (Table 1). A field survey of the project site and associated linear features was conducted on April 8, 2003. The purpose of the survey was to determine if any special-status plant species occur in the project impact areas and to further characterize the potential of available habitat in the vicinity. The botanical surveys focused on a 75-foot construction corridor along both sides of the site access road and the water and gas pipeline alignments, which incorporated all of the available land for construction. Actively farmed areas such as cultivated fields, vineyards and orchards, as well as residential and industrial sites were mapped and characterized 1,000 feet out from the alignment but were not extensively surveyed due to the lack of access and suitable habitat for special-status plant species. The isolated woodland habitat northwest of the site, earthen irrigation canals and ruderal areas were investigated for potential special-status species. A list of all plant species observed during the survey is included in Table 2. Selected site photos are also attached.

Results and Discussion

No special-status plant species were observed in the project area and no suitable habitats such as grasslands, vernal pools, or wetlands that could support the species were observed

within the study area. No recent or historic records of special-status plant species have been reported in the vicinity of the project site (Figure 2). The plant species identified through the data base searches for this area are typically associated with natural habitats that were once prevalent in the project vicinity but have since been lost to extensive habitat modification resulting from agricultural, industrial and residential development. Field, road, and railroad margins could potentially provide habitat for some special-status plants; however, grading and vegetation management practices in the project area likely preclude the establishment and persistence of any special-status species. Nearly all herbaceous species identified during the surveys were non-native or ruderal native species typical of disturbed areas (Table 2). The botanical surveys were conducted during the blooming periods of most target species or when vegetative parts would be identifiable. Most of the target species would occur in wetland environments that do not occur in the project area. No further botanical surveys are recommended for the proposed project area.

References

CDFG. 2003. *California Natural Diversity Data Base*. Search of the Newman, Crows Landing, Brush Lake, Hatch, Ceres, Gustine, Denair, Turlock, and Stevinson, 7.5-minute USGS quadrangles. April.

California Native Plant Society. (2001) *Electronic Inventory of Rare and Endangered Plants of California*, 6th Ed. David P. Tibor Editor. Sacramento, California.

Table 1. Special-Status Plant Species Potentially Occurring in General WEC Project Region.

Species Name	Status	Habitat and Blooming Period	Potential Occurrence in Project Area
Alkali milk-vetch <i>Astragalus tener</i> var. <i>tener</i>	CNPS 1B	Associated with playas, grassland and vernal pool communities. Annual herb, blooms March-June.	Not observed during field survey. Unlikely to occur due to heavy agricultural disturbance and lack of suitable habitat..
Heartscale <i>Atriplex cordulata</i>	CNPS 1B	Associated with chenopod scrub, meadows, seeps, and saline or alkaline grassland communities. Annual herb, blooms April-October.	Not observed during field survey. Unlikely to occur due to heavy agricultural disturbance and lack of suitable habitat.
Brittlescale <i>Atriplex depressa</i>	CNPS 1B	Associated with alkaline or clay soil chenopod scrub, meadows, seeps, playas, grassland, and vernal pools communities. Annual herb, blooms May-October.	Not observed during field survey. Unlikely to occur due to heavy agricultural disturbance and lack of suitable habitat
San Joaquin saltbush <i>Atriplex joaquiniana</i>	CNPS 1B	Associated with chenopod scrub, meadows, seeps, playas, and alkaline grassland communities. Annual herb, blooms April-October.	Not observed during field survey. Unlikely to occur due to heavy agricultural disturbance and lack of suitable habitat.
Vernal pool smallscale <i>Atriplex persistens</i>	FSC, CNPS 1B	Associated with alkaline vernal pool communities. Annual herb, blooms July to October.	Not observed during field survey. Unlikely to occur due to heavy agricultural disturbance and lack of suitable habitat.
Hispid bird's-beak <i>Cordylanthus mollis</i> ssp. <i>hispidus</i>	CNPS 1B	Associated with meadow, seep, playa, and alkaline grassland communities. Annual herb, blooms June-September.	Not observed during field survey. Unlikely to occur due to heavy agricultural disturbance and lack of suitable habitat.
Four-angled spikerush <i>Eleocharis quadrangulata</i>	CNPS 2	Associated with freshwater marsh and swamp communities. Perennial herb, blooms May-September.	No suitable habitat present.
Delta button-celery (Delta coyote-thistle) <i>Eryngium racemosum</i>	CE, CNPS 1B	Associated with riparian scrub in vernal mesic clay depressions. Annual/perennial herb, blooms June-August.	No suitable habitat present.
Merced monardella <i>Monardella leucocephala</i>	FSC, CNPS 1A	Associated with sandy areas in grassland communities. Annual herb, blooms May-August.	This species is presumed extinct in California and was not observed during field survey. Unlikely to occur due to heavy agricultural disturbance and lack of suitable habitat.
Little mouseltail <i>Myosurus minimus</i> ssp. <i>apus</i>	CNPS 3	Associated with alkaline soils in grassland and vernal pool communities. Annual herb, blooms March-June.	Not observed during field survey. Unlikely to occur due to heavy agricultural disturbance and lack of suitable habitat.
Prostrate navarretia <i>Navarretia prostrata</i>	CNPS 1B	Associated with coastal scrub, grassland, vernal pools communities. Annual herb, blooms April-July.	Not observed during field survey. Unlikely to occur due to heavy agricultural disturbance and lack of suitable habitat.

Table 1. Special-Status Plant Species Potentially Occurring in General WEC Project Region.

Species Name	Status	Habitat and Blooming Period	Potential Occurrence in Project Area
San Joaquin Valley Orcutt grass <i>Orcuttia inaequalis</i>	FT, CE, CNPS 1B	Associated with vernal pool communities. Annual herb, blooms April-September.	No suitable habitat present.
Sandford's arrowhead <i>Sagittaria sanfordii</i>	CNPS 1B	Associated with wetland communities. Perennial herb, blooms May-October.	Unlikely to occur due to lack of significant wetland resources. Very low likelihood in ditches, unlined canals, and in seasonally flooded fields. Not expected in project area since water does not pond long enough in drainages.

Notes:

Federal Status

FT Federally listed as threatened.

FSC Federal Species of Special Concern.

California Status

CE State listed as endangered.

CT State listed as threatened.

California Native Plant Society

CNPS 1A Plants presumed extinct in California

CNPS 1B Plants, rare, threatened or endangered in California and elsewhere

SOURCE: California Dept. of Fish and Game, California Natural Diversity Database, April 2003; California Native Plant Society, Inventory of Rare and Endangered Vascular Plants of California, 2001.

Table 2. Plant Species Observed During the WEC Botanical Survey, April 8, 2003.

Scientific Name	Common Name	Native/ Non-Native	Growth Habitat
Apocynaceae			
<i>Nerium oleander</i>	Oleander	NN	P
Asteraceae			
<i>Anthemis cotula</i>	Mayweed	NN	A
<i>Lactuca serriola</i>	Prickly lettuce	NN	A
<i>Senecio vulgaris</i>	Common groundsel	NN	A
<i>Sonchus asper</i>	Prickly sow thistle	NN	A
Boraginaceae			
<i>Amsinckia menziesii</i>	Fiddleneck	N	A
Brassicaceae			
<i>Brassica nigra</i>	Black mustard	NN	A
<i>Capsella bursa-pastoris</i>	Shepherd's purse	NN	A
<i>Raphanus sativus</i>	Wild radish	NN	A B
<i>Sisymbrium altissimum</i>	Tumble mustard	NN	A
Caryophyllaceae			
<i>Spergularia marina</i>	Sand-spurrey	N	A
<i>Stellaria media</i>	Common chickweed	NN	A
Chenopodiaceae			
<i>Atriplex rosea</i>	Tumbling oracle	NN	A
<i>Chenopodium album</i>	Lamb's quarters	NN	A
<i>Salsola tragus</i>	Russian thistle	NN	A
Fabaceae			
<i>Lotus sp.</i>	Trefoil	-	-
<i>Medicago polymorpha</i>	Burclover	NN	A
<i>Medicago sativa</i>	Alfalfa	NN	P
<i>Melilotus indica</i>	Sour clover	NN	A
<i>Trifolium repens</i>	White clover	NN	P
<i>Vicia villosa</i>	Hairy vetch	NN	A
Geraniaceae			
<i>Erodium cicutarium</i>	Red-stem filaree	NN	A
<i>Erodium moschatum</i>	White-stem filaree	NN	A B

Table 2. Plant Species Observed During the WEC Botanical Survey, April 8, 2003.

Scientific Name	Common Name	Native/ Non-Native	Growth Habitat
Lamiaceae			
<i>Lamium amplexicaule</i>	Dead nettle	NN	A
Lythraceae			
<i>Lythrum hyssopifolium</i>	Hyssop loosestrife	NN	A B
Malvaceae			
<i>Malva neglecta</i>	Common mallow	NN	A B
<i>Malva sylvestris</i>	High mallow	NN	B, P
Moraceae			
<i>Morus</i> sp.	Mullberry	NN	P
Myrtaceae			
<i>Eucalyptus</i> sp.	Gum tree	-	P
Onagraceae			
<i>Camissonia</i> sp.	Sun cup	N	A P
<i>Epilobium</i> sp.	Fireweed	-	A
Poaceae			
<i>Avena barbata</i>	Slender wild oat	NN	A
<i>Avena fatua</i>	Wild oat	NN	A
<i>Avena sativa</i>	Cultivated oat	NN	A
<i>Bromus diandrus</i>	Ripgut brome	NN	A
<i>Bromus sterilis</i>	Poverty brome	NN	A
<i>Cynodon dactylon</i>	Bermuda grass	NN	P
<i>Hordeum murinum</i> ssp. <i>leporinum</i>	Foxtail barley	NN	A
<i>Lolium multiflorum</i>	Italian ryegrass	NN	A B
<i>Phalaris minor</i>	Little-seed canary grass	NN	A
<i>Poa annua</i>	Annual bluegrass	NN	A B
<i>Sorghum halepense</i>	Johnsongrass	NN	P
<i>Triticum aestivum</i>	Wheat	NN	A
<i>Vulpia microstachys</i>	Small fescue	N	A
Polygonaceae			
<i>Polygonum aviculare</i>	Knotweed	NN	

Table 2. Plant Species Observed During the WEC Botanical Survey, April 8, 2003.

Scientific Name	Common Name	Native/ Non-Native	Growth Habitat
Portulacaceae			
<i>Calandrinia ciliata</i>	Red maids	N	A
<i>Claytonia perfoliata</i>	Miner's lettuce	N	A
Rosaceae			
<i>Prunus dulcis</i>	Almond	NN	P
Salicaceae			
<i>Populus fremontii</i>	Fremont cottonwood	N	P
Scrophulariaceae			
<i>Veronica peregrina</i> ssp. <i>xalapensis</i>	Purslane speedwell	N	A
Simaroubaceae			
<i>Ailanthus altissima</i>	Tree of heaven	NN	T
Urticaceae			
<i>Urtica urens</i>	Dwarf nettle	NN	A

Insert Figure 1a

Insert Figure 1b

Insert Figure 2

**WALNUT ENERGY CENTER
(02-AFC-4)
DATA RESPONSES, SET 1E**

ATTACHMENT BIO-25

**Bird Surveys of Turlock Irrigation District's
Walnut Energy Center Project**

Bird Surveys of Turlock Irrigation District's Walnut Energy Center Project

PREPARED FOR: Debra Crowe/CH2M HILL-SAC

PREPARED BY: John Cleckler/CH2M HILL-SAC

DATE: June 16, 2003

Introduction/Project Description

Turlock Irrigation District (TID) proposes to develop the Walnut Energy Center (WEC) west of the downtown portion of the City of Turlock in Stanislaus County, California (Figures 1a and 1b). The WEC site is located on Washington Road at the western edge of Turlock, approximately 2.7 miles west of Highway 99, just south of West Main Avenue (J17). The WEC site would be located on a 69-acre parcel that would consist of the facility site, access roads, and a temporary construction lay down yard. Construction of the WEC facility and access roads would permanently remove up to 18 acres of land currently farmed in corn and oats/wheat. Temporary impacts would occur on 51 acres adjacent to the site for the construction laydown area.

The proposed gas pipeline alignment is 3.6 miles long and follows county roads from the Pacific Gas & Electric (PG&E) Line 215 connection on Bradbury Road, north on Commons Road, and east along the railroad tracks to the WEC site.

The proposed recycled water line is approximately 1.6 miles long and is located in roadside habitats along Ruble Road (a dirt road), Tegner Road, and farm roads. The proposed potable water supply is approximately 0.9 mile and is located in the same trench as the recycled water line.

A bird species survey was conducted by CH2MHILL to supplement the biological information provided in the Application for Certification (AFC) prepared in accordance with the California Energy Commission's (CEC) Power Plant Site Certification Regulations. The purpose of the survey was to characterize the distribution and relative abundance of common and special-status bird species that could nest in the project vicinity and may be affected during construction at the WEC site and along the associated gas and water pipelines.

The nesting bird survey of the WEC site and linear facilities placed particular importance on identifying nesting raptors such as Western burrowing owl (*Athene cunicularia hypugaea*) and Swainson's hawk (*Buteo swainsoni*). The following report summarizes this survey.

Methods

Project biologist John Cleckler/CH2M HILL- SAC conducted nesting bird surveys of the WEC project area on March 19 & 20 and April 8 & 9, 2003. The investigation included walking and driving surveys. Burrowing owl surveys were performed to protocol as prescribed by the California Burrowing Owl Consortium's *Burrowing Owl Survey Protocol and Mitigation Guidelines* (1993). Walking transects were conducted over the entirety of the proposed WEC site. The project area and a surrounding 500 foot buffer area around the site were covered by a series of parallel transects approximately 20 meters apart.

The water and gas pipeline alignments are located adjacent and parallel to roads and railroad tracks. Railroad track berms were walked to survey for burrowing owl sign that may occur at the entrance to any ground squirrel or other suitable mammal burrow. Open, unvegetated roadside areas were primarily surveyed while driving slowly, stopping at any potential suitable habitat areas. Frequent stops were made to 1) inspect all potential nest areas for raptors, as well as for songbirds and waterbirds, 2) focus on unique or other potentially sensitive habitat areas, 3) investigate any observed nests for activity, and 4) to identify species observed using binoculars. The vehicle was often used as a "blind" for Swainson's hawk surveys since the observer can typically approach much closer to a hawk without causing it to fly off. Particular focus was placed on investigating suitable Swainson's hawk nest trees and using binoculars to identify all observed raptors and courtship or nesting behaviors.

In addition to the nesting bird surveys conducted in the spring 2003, biological reconnaissance visits were performed at the WEC site and associated linears on September 3, October 2, 17, and 30, 2002 and January 31, 2003 in part to characterize winter bird use of the project area.

Results and Discussion

The March 19 and 20, 2003 survey visits were conducted during conditions of partly cloudy skies, calm winds, and temperatures between 50 and 60 ° Fahrenheit (F). This survey was conducted following a period of modest rain storms. There was some concern as to whether the March survey would be too early to detect returning Swainson's hawks. Local observations suggested that the species' numbers were comparatively low for the moment in time, suggesting a potential late migration. However, two Swainson's hawk pairs were observed along Highway 99 approximately 5 miles south of Stockton on March 20, 2003 while returning from a site visit.

The April 8 & 9, 2003 survey visits conducted during conditions of clear skies, calm winds, and temperatures between 60 and 75 ° F. Overall bird activity was lower relative to the March visit and no Swainson's hawks were observed. The combined results for the March and April surveys of the WEC site and the linear facilitates are further discussed below. A complete list of wildlife species detected during the avian surveys is included in Table 1.

WEC Site

The WEC site is currently in agricultural production (corn and winter wheat) and may provide marginal forage habitat for a few bird species but is limited in providing nesting opportunities. Common species such as mourning dove (*Zenaida macroura*), white-crowned sparrow (*Zonotrichia leucophrys*), and house finch (*Carpodacus mexicanus*) were observed on the site. Species such as rock dove (*Columbia livia*), Brewer's blackbird (*Euphagus cyanocephalus*), European starling (*Sturnus vulgaris*), and American crow (*Corvus brachyrhynchos*) were primarily active and foraging in the vicinity of the nearby Foster Farms grain silos and the adjacent electrical substation.

Corn is grown on the WEC site during the summer when breeding Swainson's hawks are present in the Central Valley. Due to its height and density, corn fields are not considered suitable forage habitat for Swainson's hawks. The alternating winter wheat crop may provide suitable forage for other species of hawks that may overwinter in the Central Valley.

No bird nests were observed on the WEC site. The closest observed nests were found in the riparian patch northwest of the WEC site and on the pole line along Ruble Road. Nests observed in the riparian patch were characterized as pre-existing, cantaloupe-sized stick nests. Western scrub-jay (*Aphelocoma californica*) appeared to be actively nesting in a cottonwood. Mourning dove, western kingbird (*Tyrannus verticalis*), and northern mockingbird (*Mimus polyglottos*) were also observed in the riparian patch. An active yellow-billed magpie (*Pica nuttalli*) nest was observed on the pole line adjacent to Ruble Road at the southwest corner of the project parcel. Magpies were abundant throughout the general vicinity and their large stick nests were found in landscaped trees, transmission line towers, pole lines, and roof-top antennae.

The railroad corridor adjacent to the WEC site and gas pipeline was the most likely place to find signs of western burrowing owl. The soil used to develop the berm for the railroad is relatively friable and soft enough to be used by mammals to construct underground burrows that can be suitable for burrowing owl occupation. The berm is also relatively protected from ground disturbance. All other areas along the proposed gas and water pipeline alignments are routinely maintained and do not support suitable burrows. No burrowing owl or owl sign was observed along the corridors or within the WEC site during the current survey. Although California ground squirrel (*Spermophilus beecheyi*) burrows were observed along the railroad corridor and margins of the fields few squirrels were observed. Low squirrel activity may be the result of control measures such as poison bait stations observed along the railroad corridor. A portion of the associated gas line will be located adjacent to the railroad.

Wildlife species diversity was low on the WEC site. Species observed included Western fence lizard (*Sceloporus occidentalis*), domestic dog (*Canis lupus*), and domestic cat (*Felis catus*).

The primary bird species observed during the winter surveys were American crow, Brewer's blackbird, Western meadowlark, and mourning dove.

Project Linears

Gas pipeline

The proposed gas pipeline alignment parallels the railroad corridor and paved county roads. The alignment is adjacent to substantial agricultural fields, small farms, dairies, and residences. The agricultural fields are in production during the spring and summer bird nesting season. Crops along the pipeline alignments, such as alfalfa, hay, orchards, and row crops, provide suitable foraging habitat for a variety of birds. Mourning dove, barn swallow (*Hirundo rustica*), yellow-billed magpie, American crow, savannah sparrow (*Passerculus sandwichensis*), western meadowlark (*Sturnella neglecta*), red-winged blackbird (*Agelaius phoeniceus*), and Brewer's blackbird were among the species observed foraging primarily on seeds and insects in fields adjacent to the alignments. Egrets were observed in agriculture fields, most likely foraging on small mammals and reptiles.

Swainson's hawks were not observed during the spring or winter surveys although other raptors including white-tailed kite (*Elanus caeruleus*), northern harrier (*Circus cyaneus*), red-tailed hawk (*Buteo jamaicensis*), Cooper's hawk (*Accipiter cooperii*), and American kestrel (*Falco sparverius*) were observed in the general area. A Cooper's hawk was observed in an almond orchard along the north end of Commons Road near the railroad. The hawk was in an area adjacent to two homes. A Cooper's hawk was observed in this same location during a winter 2002 reconnaissance visit to the project area. It is possible that the hawk was hunting for birds drawn to backyard bird feeders. No appropriate sized nest was observed in the area, though it is possible that the Cooper's hawk is nesting in one of the large trees associated with these homes. A red-tailed hawk nest was discovered in a small stand of tall cottonwoods, approximately 1,500 feet west of Commons Road near the intersection with Bradbury Road.

Road and railroad berms were investigated for potential burrowing owl burrows. These areas were characterized as being primarily free of vegetation and mammal burrows. They appeared to be actively maintained and likely encounter frequent disturbance by vehicles and farm equipment. Adjacent agricultural fields were not walked, although binoculars were used to scan these areas for hawks, owls, and other wildlife.

Adjacent dairies attract large numbers of starlings, crows, and blackbird species, most likely scavenging on cattle feed. A wide variety of birds were associated with adjacent homes, where they are likely attracted to landscaped gardens and trees as well as backyard bird feeders. Residential shade trees provide structural opportunities for nest building. Abandoned barns and other derelict structures provide potential nest sites for barn owls and other species. Numerous yellow-billed magpie nests were observed in trees and on structures such as roof-mounted antennae and power poles.

Recycled Water Line and Potable Water Supply

The proposed recycled water line and potable water supply pipeline route share a similar alignment. Habitats along the water line alignments included disked fields and residential farms that attract common bird species mentioned previously. The eastern end of the alignment is adjacent to industrial areas in the City of Turlock, terminating at the Turlock wastewater treatment ponds.

The southernmost wastewater treatment pond is primarily surrounded by bare ground and is used by a large variety of water birds. Snowy egret (*Egretta thula*), great egret (*Casmerodius albus*), Canada goose (*Branta canadensis*), domestic goose (*Anser anser*), mallard (*Anas platyrhynchos*), northern shoveler (*Anas clypeata*), redhead (*Aythya americana*), American avocet (*Recurvirostra americana*), black-necked stilt (*Himantopus mexicanus*), killdeer (*Charadrius vociferus*), Western sandpiper (*Calidris mauri*), common snipe (*Gallinago gallinago*), and black phoebe (*Sayornis nigricans*) were observed during the survey. The habitat value of the southern pond is primarily foraging and roosting. The pond margins may provide nesting opportunities for species such as stilts, avocets, and killdeer.

The margins of the northern pond are heavily vegetated with typical wetland and riparian vegetation. The pond is thick with cattails and a row of willows border approximately one-third of the shoreline. Pied-billed grebe (*Podilymbus podiceps*), ruddy duck (*Oxyura jamaicensis*), barn swallow, and red-winged blackbirds were observed at the northern pond. A red-shouldered hawk (*Buteo lineatus*) was observed perched within a willow overhanging the pond. The hawk may have been using a large stick nest nearby the perch. The emergent and riparian vegetation at the northern pond provide nesting opportunities for a variety of wetland and riparian associated bird species. Construction of the WEC water line will not affect the treatment ponds.

In addition to the spring surveys, snowy egret, eared grebe (*Podiceps nigricollis*), mallard, canvas back (*Aythya valisineria*), ring-neck duck (*Aythya collaris*), wood duck (*Aix sponsa*), American coot (*Fulica americana*), black-necked stilt, ruddy duck, American avocet, and greater yellowlegs (*Tringa melanoleuca*) were observed in the treatment ponds during a winter reconnaissance site visit on January 13, 2003.

The remainder of the water line alignment is located in pavement, bare road shoulders, and open fields. Common bird species similar to those observed along the proposed gas line were observed in these areas. Several active magpie nests were found in trees and on pole lines adjacent to the alignments. Other small- to medium-sized passerine nests were observed. The continued presence of an American kestrel east of Tegner Road suggested the potential for a nearby nest.

Summary and Recommendations

The work areas for the proposed WEC site and linear features are within and adjacent to agricultural, rural residential, small farm, and industrial development. The bird species observed within these project areas were typical for such areas throughout the Central Valley. A variety of common bird species use the proposed project area vicinity for foraging and nesting.

No burrowing owls or burrowing owl signs were observed at any ground squirrel burrow locations within suitable habitat in the project area. Although the California Natural Diversity Database (CNDDB) did not include records of burrowing owl observations in the immediate vicinity (Figure 2), potential, yet marginal, nesting and foraging habitat may be found throughout the surrounding agricultural and industrial areas. The closest referenced burrowing owl observation was provided by Tim Ford, TID Fisheries Biologist. Mr. Ford was aware of active burrowing owl nest sites near Gomes Lake approximately 8 miles

northwest of the project site. No impacts to burrowing owls are expected from the proposed WEC project.

No Swainson's hawks were observed foraging or nesting within the project areas. The closest Swainson's hawk nest locations included in the CNDDDB are records within approximately 7 miles of the project area. The associated linears are adjacent to several isolated, potential nest trees along roads, field perimeters, in residential landscape areas, and in the small riparian patch north of the WEC site. Most of these trees are landscape shade trees associated with residences and farms. No trees are expected to be removed as part of the project. Although wildlife and birds are accustomed to noise from farm equipment, trains, and road traffic in the project area, additional noise during construction activities could disrupt and potentially result in nest failure for locally common bird species. No special-status birds, or other wildlife, are known from the project vicinity and none should be affected by construction noise. The WEC site is typically in corn during the summer when Swainson's hawks are in the Central Valley. Corn does not provide suitable Swainson's hawk forage habitat. No impacts to Swainson's hawks are expected from the proposed WEC project.

The Central Valley attracts large numbers of migrant waterfowl. Although no significant numbers of migratory waterfowl were observed in the project area during migration, some birds could be attracted to ponding areas such as the Turlock wastewater treatment ponds, and potentially, but less likely in the proposed WEC stormwater basin. The proximity of new transmission lines to the stormwater basin may present a slight potential for bird collisions. Because the water in the stormwater basin is expected to percolate within 2 weeks of a storm event and would not contain significant amounts of aquatic invertebrates and vegetation (food for birds), the chances of large numbers of birds using the pond is very low.

As discussed in the AFC, avoidance measures will be developed to address any nesting birds, including special-status or otherwise sensitive bird species, that may be influenced by proposed construction and operation activities. These species may include Swainson's hawk, Western burrowing owl, California horned lark (*Eremophila alpestris*), tricolored blackbird (*Agelaius tricolor*), and egrets and herons. These measures are briefly described in Section 8.2 of the AFC and will be further defined in the Biological Resources Mitigation Implementation and Monitoring Plan (BRMIMP) for the project.

Species List

Table 1. Wildlife Species Observed During Avian Surveys of TID WEC (March 19 & 20 and April 8 & 9, 2003)

Common Name	Scientific Name	Location	Sign
REPTILES			
Western fence lizard	<i>Sceloporus occidentalis</i>	WEC site, gas line, water line	Observation
BIRDS			
Pied-billed grebe	<i>Podilymbus podiceps</i>	Water line	Observation
Snowy egret	<i>Egretta thula</i>	Gas line, water line	Observation
Great egret	<i>Casmerodius albus</i>	Gas line, water line	Observation
Canada goose	<i>Branta canadensis</i>	Water line	Observation
Domestic goose	<i>Anser anser</i>	Water line	Observation
Mallard	<i>Anas platyrhynchos</i>	Water line	Observation
Northern shoveler	<i>Anas clypeata</i>	Water line	Observation
Ruddy duck	<i>Oxyura jamaicensis</i>	Water line	Observation
Redhead	<i>Aythya americana</i>	Water line	Observation
American avocet	<i>Recurvirostra americana</i>	Water line	Observation
Black-necked stilt	<i>Himantopus mexicanus</i>	Water line	Observation
Killdeer	<i>Charadrius vociferus</i>	Gas line, water line	Observation, vocalization
Western Sandpiper sp.	<i>Calidris mauri</i>	Water line	Observation
Common snipe	<i>Gallinago gallinago</i>	Water line	Observation
Turkey vulture	<i>Cathartes aura</i>	Gas line	Observation
White-tailed kite	<i>Elanus caeruleus</i>	Gas line	Observation
Northern harrier	<i>Circus cyaneus</i>	Gas line	Observation
Red-shouldered hawk	<i>Buteo lineatus</i>	Water line	Observation
Red-tailed hawk	<i>Buteo jamaicensis</i>	Gas line, water line	Observation, vocalization
Cooper's hawk	<i>Accipiter cooperii</i>	Gas line	Observation
American kestrel	<i>Falco sparverius</i>	Gas line, water line	Observation, vocalization
Mourning dove	<i>Zenaida macroura</i>	WEC site, gas line, water line	Observation
Rock dove	<i>Columba livia</i>	WEC site, gas line, water line	Observation
Northern flicker	<i>Colaptes auratus</i>	Gas line	Observation
Black phoebe	<i>Sayornis nigricans</i>	Water line	Observation
Western kingbird	<i>Tyrannus verticalis</i>	WEC site,	Observation, vocalization
Barn swallow	<i>Hirundo rustica</i>	Gas line, water line	Observation
Western scrub-jay	<i>Aphelocoma californica</i>	WEC site, gas line, water line	Observation, vocalization
Yellow-billed magpie	<i>Pica nuttalli</i>	WEC site, gas line, water line	Observation
American crow	<i>Corvus brachyrhynchos</i>	WEC site, gas line, water line	Observation, vocalization
Northern mocking bird	<i>Mimus polyglottos</i>	Gas line	Observation, vocalization
European starling	<i>Sturnus vulgaris</i>	WEC site, gas line, water line	Observation, vocalization
White-crowned sparrow	<i>Zonotrichia leucophrys</i>	WEC site, gas line, water line	Observation
Savannah sparrow	<i>Passerculus sandwichensis</i>	Gas line	Observation

Table 1. Wildlife Species Observed During Avian Surveys of TID WEC (March 19 & 20 and April 8 & 9, 2003) (Continued)

Common Name	Scientific Name	Location	Sign
BIRDS (Continued)			
Western meadowlark	<i>Sturnella neglecta</i>	Gas line	Observation, vocalization
Red-winged blackbird	<i>Agelaius phoeniceus</i>	Gas line, water line	Observation, vocalization
Brewer's blackbird	<i>Euphagus cyanocephalus</i>	WEC site, gas line, water line	Observation
House finch	<i>Carpodacus mexicanus</i>	WEC site, gas line, water line	Observation
MAMMALS			
Coyote	<i>Canis latrans</i>	WEC site, gas line	Scat
Domestic dog	<i>Canis lupus</i>	WEC site, gas line, water line	Tracks
Domestic cat	<i>Felis catus</i>	WEC site, gas line, water line	Tracks
Domestic goat	<i>Capra hircus</i>	Gas line	Observation
California ground squirrel	<i>Spermophilus beecheyi</i>	WEC site, gas line, water line	Observation, burrows
Cow	<i>Bos taurus</i>	Gas line	Observation, scat, tracks

Insert Figure 1a

Insert Figure 1b

Insert Figure 2

**WALNUT ENERGY CENTER
(02-AFC-4)
DATA RESPONSES, SET 1E**

ATTACHMENT BIO-26

Walnut Energy Center – Wetlands and Waters of the U.S. (Survey Report)

Five copies of the Walnut Energy Center – Wetlands and Waters of the U.S. (Survey Report) have been provided to the California Energy Commission.